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Foundation



DAIRY PROJECT

QUARTERLY PROGRESS REPORT

January – March 2015



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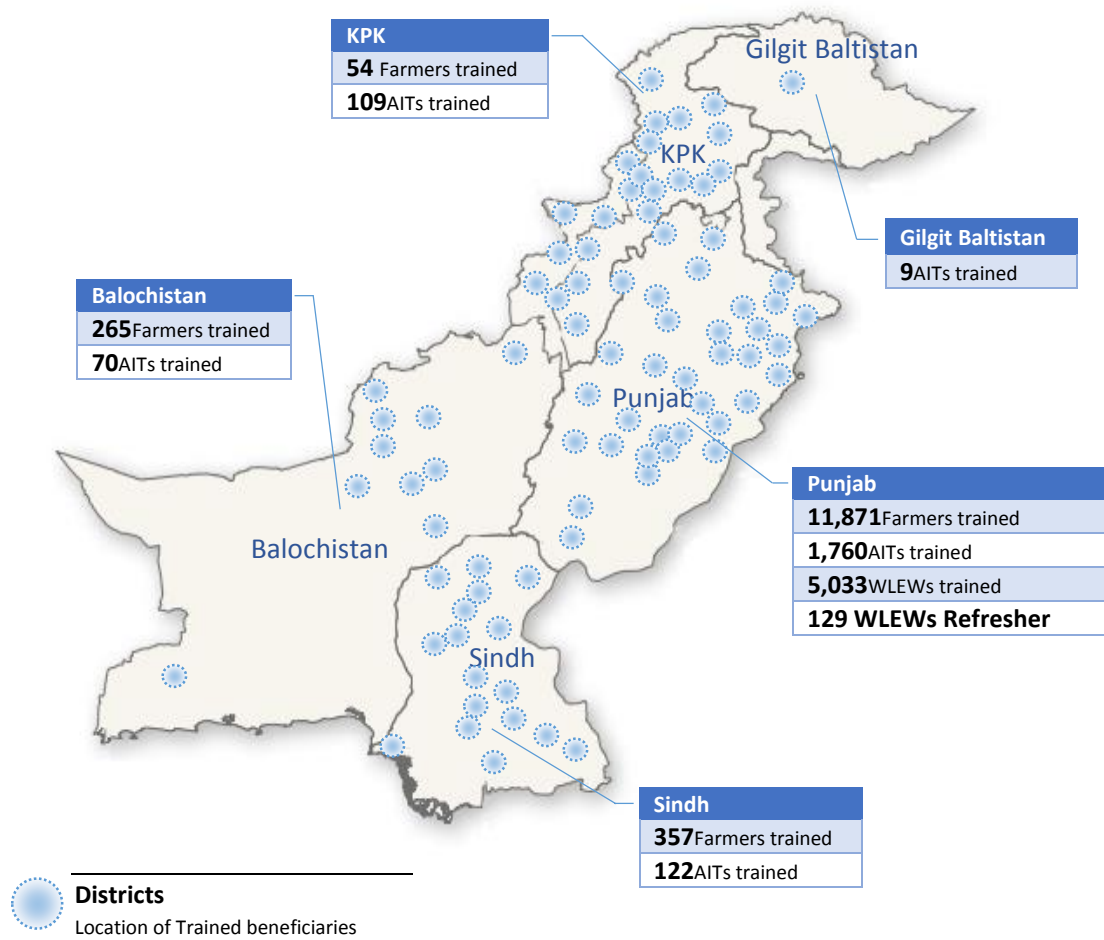


Input:

Over **450** dairy trainings and awareness classes provided to people from rural areas and about 19,000 of trainees were awarded with start-up kits.

Output:

Over **19,000** trained beneficiaries making dairy farming sector efficient and providing extension services.



Outcome:

17% increase in milk yield of dairy animals

78% of the trained farmers adopting more than three best practices for dairy farming

5,200 young unemployed men and women established their own business

Impact:

Increase in productivity of the dairy sector

Increase in trained farmers' average monthly income by **PKR. 6,000**

WLEWs and AITs earning on average **PKR. 1,091** and **PKR. 9,371** per month respectively

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List of Acronyms

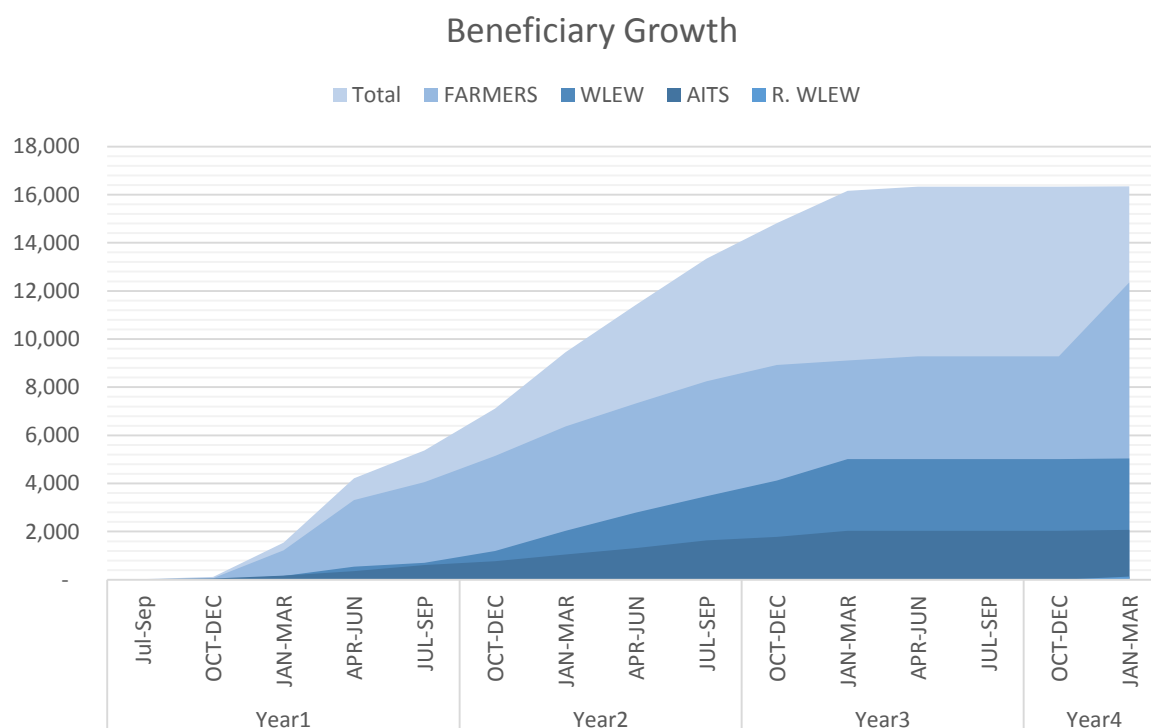
AI	Artificial Insemination
AITs	Artificial Insemination Technicians
AOR	Agreement Officer's Representative
BOG	Board of Governors
BRSP	Balochistan Rural Support Program
CMA	Cumulative Moving Average
DRDF	Dairy and Rural Development Foundation
EMPP	Environmental Monitoring Program Plan
FOM	Field Operations Manager
FOU	Field Operation Unit
FROs	Female reproductive organs
GM	General Manager
LBEs	Livestock Business Entrepreneurs
LHW	Livestock Health Worker
M&E	Monitoring and Evaluation
MSI	Management Systems International
MTs	Master Trainers
NGO	Non-Governmental Organization
PD	Project Director
PMU	Project Management Unit
RFP	Request for Proposal
SMs	Social Mobilizers
TOR	Terms of Reference
TOTs	Training of Trainers
UAF	University of Agriculture Faisalabad
US	United States
USAID	United States Agency for International Development
UVAS	University of Veterinary & Animal Sciences
VTIs	Vocational Training Institutes
WLEWs	Women Livestock Extension Workers

Executive Summary

The Dairy Project is a five year intervention. It is a joint effort of the United States Agency for International Development (USAID) and Dairy and Rural Development Foundation (DRDF) to enhance rural incomes by increasing livestock productivity. The project provided training to 12,773 dairy farmers, from which 418 were commercial dairy farmers and farm managers. These farmers were given training in best dairy farm practices to help them increase milk productivity which will eventually lead to an increase in their income. Quality dairy extension services were not available to farmers in the area. In order to bridge the gap, the project provided training to 2,071 rural, unemployed young men as Artificial Insemination Technicians (AITs) and 5,161 rural, unemployed young women as Women Livestock Extension Workers (WLEWs) to assist dairy farmers with quality extension services. Once the AITs and WLEWs are trained and certified by the University of Veterinary and Animal Sciences (UVAS), Lahore, the Dairy Project helps in establishing them as entrepreneurs. In the reporting period the project trained 39 AITs, 147 WLEWs and 3,472 farmers.

An internal survey was conducted by the M & E department in the month of January to evaluate the performance of the trained beneficiaries in the month of Oct till Dec 14. Even without any follow ups provided to them during the lean period of the project, the beneficiaries performed well above expectations. This demonstrates beneficiaries' potential to sustain in future. Survey results reveal that the milk yield of animals has on average been 17 percent greater compared to the baseline. Also, there was an increase in the demand of Artificial Insemination services during the evaluated months which increased per month average income of AITs up to PKR 9,371. WLEWs had an average income of PKR, 1,091.

Figure 1 Quarterly Growth in the Number of Trained Beneficiaries



Financials

Aid for Sustainable Development

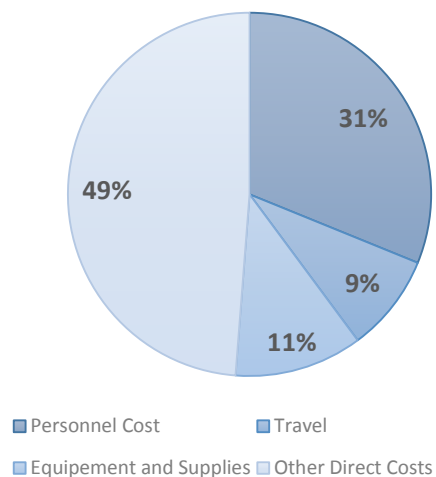
Table 1: Financial Summary

Description	Amount (US \$)
Total Estimated USAID Amount:	21,018,293
Amount Obligated:	20,918,293
Leverage Amount (Non-Federal):	5,108,059
Total Project Funds Expended To Date (end March-2015):	14,937,864
Project Funds Expended During the Reporting Quarter (January-March 2015):	652,952
Obligated Project Funds Remaining Available:	5,980,429
Project Funds Allocated for the Next Quarter (April-June, 2015):	840,000

Table 2: Expenditure Summary

Expense Categories Under Cooperative Agreement	Expenditure during Jan-Mar 2015 (US \$)
Personnel Cost	203,395
Travel	56,798
Equipment and Supplies	74,331
Other Direct Costs	318,428
Total	652,952

Jan-Mar, 2015 US\$ 652,952



"A successful economic development strategy must focus on improving the skills of the area's workforce, reducing the cost of doing business and making available the resources business needs to compete and thrive in today's global economy."

-Rod Blagojevich



Progress & Performance Marching Forward

Due to the vital importance of the livestock sector in Pakistan, the Dairy Project, with its extensive training programs for dairy farmers, Women Livestock Extension Workers (WLEWs) and Artificial Insemination Technicians (AITs), is playing an important role in transforming livelihoods of rural communities. After achieving high success in the last three years, the project is now extending its efforts to undertake farm up gradations, establish bio gas plants, as well as focus on cluster formation that will bring together project-trained beneficiaries to work jointly as part of the supply chain network, thereby ensuring the sustainability of the project after its completion. The Dairy Project is being implemented in all four provinces, with a main focus on Southern Punjab, within a time frame of five years (2011- 2016).

This progress report describes the operations and progress of the project in the period January 2015 to March 2015. For a detailed overview of the project, please refer to annex 1.

Farm Up gradation and Bio gas plants

Up-graded Village Level Model Farms

The project aims to facilitate 100 small dairy farmers in different village centers, on a cost share basis, to upgrade their existing small farms to model farms at village level. The upgraded farm will facilitate farmers in implementing best dairy farming practices, and these farms will serve as a model for neighboring dairy farmers. Based on the learning from pilot phase in year three, the project designed Standard Operating Procedures (SOPs) for farm up gradation in consultation with all the concerned departments for smooth operation and timely up-gradation. After the up-gradation, the farm will be accessible for training of nearby farmers on best dairy farming practices.

The Dairy Project received an overwhelming response from the dairy farming community in lieu of its new initiative of providing assistance for farm up-gradation. A total of 1,065 applications were received from all over Pakistan. However, the project will focus only on Southern Punjab. To ensure the transparency, Chief of Party formed a committee of 5 members under the direction of General Manager Field Operations (GMFO) for farm selection and approval of the assistance required. Initial scrutiny is done by farm up-gradation team in each district, which includes physical visits to the farm, need assessments and collection of primary farm data. After the initial survey, the farm up-gradation team requests the committee to visit the selected farm and interview the farmer for the final selection. This entire process is monitored by the Monitoring and Evaluation Department (M&E). A step-wise selection process is given in below diagram.



In the current reporting period, the farm up-gradation team selected farms from Vehari, Bhawalpur, Lodhran and Khanewal districts. A district wise status of farm up-gradation is given below.

Table 3 Farm up-gradation status summary

District	Applications	Shortlisted/ Selected	Under Up- gradation	Construction Completed	Training Started
Vehari	128	23	19	4	7
Bahawalpur	35	02	02	0	1
Khanewal	173	02	02	0	0
Lodhran	54	10	10	0	2
Total	390	37	33	4	10

Bio Gas

Animal nutrition is an essential part of animal health and milk productivity, and fodder is one of the important nutrients for these animals. Cost of production of fodder is a major concern for the farmer. Taking this into account, the Dairy Project aims to shift 10 irrigation tube-wells running on fuel/electricity to manure bio-gas units. The slurry produced from these bio gas units will also improve the fertility of the land, which is an additional benefit for the farmers. During the current reporting period, the project worked on the design and environmental aspects of the bio-gas plants that are to be established in the coming quarter.



Training and Support for Dairy Farmers

As of March 31, 2015, the Dairy Project has trained a total of 12,773 farmers. Table 4 shows the total number of farmers trained bifurcated according to the training type.

Table 4: Number of Farmers Trained and Training Type

Type of Training	Farmers Trained
Two-Day Training	5,118
Four- Day Training	3,749
One Month Training	418
One-day Training	3,236
Seven-day Training	252
Total	12,773

Building on the ground work carried out in the last quarter for the establishment of training centers and organization of the human resource, the project began three types of farmers training in Field Operation Units of Vehari and Bahawalpur. The project conducted one-day farmer training on 10 up-graded dairy farms (7 farms in FOU Vehari and 3 farms in FOU Bahawalpur), while the seven-day and one month training sessions were conducted on the Sukheki Nestle Farm.

Table 5 Training Targets and Achievement (Jan-March, 2015)

Type of Training	Targets	Achievement	Variance	Justification for Variance*
One - Day Training	4,400	3,190	(1,210)	Delays farm up-gradation (Shed construction due to extended rainy season)
Seven - Day Training	250	282	32	
One Month Training for commercial farmers and farm managers	25	0	(25)	
Total	4,675	3,472	(1,203)	

*Please refer to table-13 on "issues and challenges" field team faced in achieving the targets

Table 5 below shows the progress on indicators from the Monitoring and Evaluation Activity Plan. These indicators are calculated on the basis of quarterly follow up surveys, which were conducted in January 2015. For this purpose, a random sample of farmers was selected from the Punjab region. Refer to Annex 4: Performance Evaluation Sampling Strategy for detailed sampling and evaluation methodology.

Table 6 Performance Indicators for Project Trained Farmers

Indicators	Targets	Achievement
Percentage of farmers getting vaccination done, for FMD and HS, for their dairy animals	At least 40 percent of farmers	85 percent
Average monthly (per animal owned by project-assisted household) quantity of milk produced relative to the baseline	At least 10 percent increase in milk yield.	17 percent
Percentage of farmers using services of Women Livestock Extension Workers (WLEWs) relative to the baseline	At least 10 percent farmers using services of WLEWs.	10 percent

Percentage of project-assisted farmers using at least three best practices relative to the baseline (disaggregated by farmers/farm managers)	60 percent farmers adopted three or more best practices	78 percent
Number of villages reached with TV and/or Radio sketches	-	Year-4 campaign to be launched
Number of project-assisted farmers trained in business practices, and book-keeping	97.7per cent	100 percent



Training and Support for Artificial Insemination Technicians (AITs)

In the reporting period, the dairy project established its AI-training center at Burj Attari with the help of Punjab Vocational Training Center (PVTC). It has the facility to conduct class room training and hands-on training through table palpation, dummy cow and ultra-sonography machine. The dairy project also established a practical training farm at Sham-ke-Bhattian, where the trainees are provided the opportunity of performing insemination and pregnancy tests on live animals. It took the whole first month of the quarter to set up this training center.

In the reporting period, mobilization team mobilized two batches of AITs in District Chinnot and Jhang. One of them is passed out while the other is under training. In the process, the mobilization team conducted 19 corner meetings to mobilize the AITs from the mentioned district along with newspaper advertisement for application. Quarterly training summary for January-March, 2015 is given below.

Table 7 Training Targets and Achievement (Jan-March, 2015)

Month	Target	Achievement	Variance	Justification for Variance*
January, 2015	65	0	(65)	Delays due to uncertainty created by new breeding policy Delays due to series of meeting Secretary Livestock
February, 2015	65	0	(65)	
March, 2015	70	39	(31)	
Grand Total	200	39	(161)	

*Please refer to table-13 on "issues and challenges" field team faced in achieving the targets

After getting the extension, the bike validation team surveyed 139 AITs, out of which 73 qualified for the bike award. The qualified AITs were awarded with motorbikes in bike award ceremonies held in January-February 2015. The breakdown of the motorbike awardees according to province is as follows:

Table 8 Bike Distributions - Province Wise

Province	AITs
Baluchistan	12
Khyber Pakhtunkhwa	5
Punjab	31
Sindh	25
Grand Total	73

The table below, shows progress on indicators from the Monitoring and Evaluation Activity Plan, based on the quarterly follow up survey conducted in January, 2015:

Table 9 Performance Indicators for Project Trained AITs

Indicators	Targets	Achievement
Average monthly income of AITs from providing AI services relative to the baseline	Income of at least PKR. 3,000 (US\$ 32) per month	PKR. 9,371
Number of insemination procedures performed per AIT/ per month	-	34
Average number of inseminations per AIT per day	At least one insemination case per day	1.2
No. of pregnancy tests performed per AIT per month		35

Percentage of AITs providing their services as insemination technicians	60 percent of AITs	92 percent
Ratio of insemination procedures to pregnancy	At most 1.7 insemination per pregnancy	1.9
Percentage of project-trained AITs introduced to input suppliers	100 percent	100 percent
Number of AITs successfully trained in book-keeping, business management	100 percent	100 percent

In the evaluated quarter there was an increase in demand for the Artificial Insemination services as the breeding season was underway. On an average, 34 cases were dealt with by each project trained AIT per month. This increased the monthly profit of the AITs to up to PKR. 9,371. Besides this, the conception rate decreased slightly during this period due to the less intake of feed which caused problems in the reproductive system of the animal (as reported by the AITs). Each AIT conducted on average 35 pregnancy tests per month. It was also observed that the AITs who provided vaccination services along with artificial insemination services, earned PKR. 2,839 more than those who only provided AI services.



Training and Support for Women Livestock Extension Workers (WLEWs)

Training of WLEWs is one of the most important components of the project as it not only aims to improve the potential of the livestock sector through better animal health and extension services at the village level, but also helps empower rural women.

Along with the Project's previous efforts to help and support the beneficiaries at ground level by providing regular follow ups, the project will further focus on making clusters for such trained beneficiaries at the village level during the extension phase.

In the current reporting period, the project trained WLEWs in untapped area and provided refresher training to previously trained WLEWs to boost their income. In this process mobilization teams conducted 100 community meetings and 72 household visits in Vehar and Bhawalpur zones. Field teams established 5 village based easily accessible training centers to train the selected women. The training summary for the reporting period is given below:

Table 10 Training Targets and Achievement (Jan-March, 2015)

Month	WLEWs Training			WLEWs Refresher			Justification for Variance*
	Target	Achievement	Variance	Target	Achievement	Variance	
January, 2015	81	0	(81)	54	0	(54)	It took longer time in selection and establishment of FoUs
February, 2015	82	0	(82)	54	0	(54)	
March, 2015	82	18	(64)	55	129	74	
Grand Total	245	18	227	163	129	34	

*Please refer to table-10 on "issues and challenges" field team faced in achieving the targets

The M & E team conducted internal quarterly survey in January, 2015 using structured instruments to measure the performance of project trained WLEWs. The salient results of performance indicators are given in below table:

Table 11 WLEW Performance Indicators

Indicators	Targets	Achievement
Average monthly income of WLEWs from livestock services relative to the baseline	Income of at least PKR. 3,000 per month	PKR. 1,091 ¹
Average number of farmers served by WLEWs per month relative to the baseline	-	18
Number of villages served by the WLEWs	2,000 villages	4,065 ²
Number of project-trained WLEWs providing services as self-employed extension workers	At least 60 percent of the trained WLEWs providing services	35 percent
Number of WLEWs operating / managing project-supported milk collection points in project-assisted communities	At least 20 milk collection points	16
Number of WLEWs trained to provide feed, nutrient, and other inputs for sale to farmers	60 percent	80 percent
Percentage of project-trained WLEWs introduced to input suppliers	100 percent	100 percent
Number of the WLEWs trained in business practices, book-keeping, and milk collection	October to December 2014 = 0	0

Indicators	Targets	Achievement
1: Combined income of both Livestock Health Workers (LHWs) and Livestock Business Entrepreneurs (LBEs).		
2: Estimated Number of villages. According to the survey every WLEW visited 1.8 villages on average and we have trained 4517 WLEWs. As per the project SOP of WLEWs' selection, we assume that at most 2 WLEWs are from one village.		

Income levels of WLEWs decreased in the evaluated quarter. Due to the project transition period to the extension phase there was no follow up being provided to the beneficiaries during the silent period, which could be one of the reason in slight decrease in the WLEWs incomes. On an average each WLEWs earned PKR 1,091 tackling 35 health cases and selling 9 bags of Vanda per month.

The project is also looking to make liaisons with other initiatives and development bodies who are currently working—or planning to work—for the empowerment of women. This will result in a good learning activity for both the parties since the joint planning of interventions will produce more effective and efficient results. Another opportunity to expand the work of the WLEWs is to introduce them to the beef market and create linkages with market input suppliers. In this way, WLEWs will be able to expand their work and sources of income.

Social barriers for the working woman in the rural society of Pakistan are quiet high. One of the objectives of the project is to empower such women in the society by making them entrepreneurs. In this way they will become financially independent and have a better position in daily family matters. These norms in the society are very hard to break, but we can see from the table given below that age old customs are slowly changing. The percentages of the WLEWs who are still working is much better than the WLEWs who were made to leave their work. However, these social barriers do exist which make work for WLEWs a bit difficult in terms of mobility and interaction with farmers.

Table 12 Social Issues faced by WLEWs

Social Constraints Questions	WLEWs	WLEWs left
	Who Agree	
My family thinks that Women should be allowed to work outside the house	50%	39%
My family thinks that the women should only work to fulfil the economic needs	49%	62%
My family thinks that the primary responsibility of woman is to take care of the house	66%	77%
I have to face a lot of restrictions from my family to step outside the house	29%	52%
In my family it is seen as unethical for a woman to step outside the house alone	67%	74%
My family thinks that the woman of the house should not go outside village without a male member	62%	72%
My family thinks that male are more capable of running a business than woman	78%	82%
My villagers think that male can do better work of extension workers than woman	61%	84%
My family think that woman should not be talking outside the house with any male	58%	71%

Even without follow-ups, WLEWs managed to keep their average income above PKR 1,000 which is more than the income they were earning before the project started providing them with follow-up services (an average PKR. 500). This shows that they have started gaining trust of the farmers and their business is flourishing. With project's focus towards cluster formation in the extension phase, the Project expects that WLEWs will be able to work more effectively in close coordination with each other. It will also be helpful in making them independent from project support and make them more sustainable.

Capacity Building of Staff: Training on Social Mobilization, Communication and Gender Sensitization

Majority of the field staff like master trainers, assistant master trainers and follow up facilitator are veterinarian doctors. Field staff has to work directly with the community and frequently interact with rural people. Most of the times, they don't have the relevant knowledge and expertise of community mobilization.

WLEW is one of the important components of the dairy project. Identification and selection of WLEWs can be a big challenge if we don't have proper knowledge and understanding of socio cultural dynamics of our community. Survey on WLEWs revealed that social constraints are major hurdle in their work. It was felt that there was a need to sensitize and enhance the understanding of staff on gender needs, socio-cultural barrier and different dimensions. To address the above mentioned problems, a comprehensive training on social mobilization, gender sensitization and communication skill was organized in Vehari and Bahawalpur.

Objectives:

- To improve the understanding of field staff regarding social mobilization
- To sensitize staff about gender sensitization and related issue faced in community
- To improve and enhance effective communication skills

Methodology

- Interactive sessions
- Group work and discussion
- Role play
- Lecture

Topic Discussed

- Communication process
- Types of communication
- Barrier in communication
- Tools and technique of effective communication
- Importance of listening in communication
- Social mobilization tools
- Gender and gender related issues

Communication, Awareness Campaign and Other Activities:

- A. Communications team provided support to help draft and release Dairy Project's advertisements in newspapers. These included "Training Program for Artificial Insemination Technicians", "Farm Management Training Program", "Job opportunity", "Cattle Artificial Insemination Semen/Materials Required and "Public Notice".
- B. Helped design and develop training and mobilization material including modules, brochures, record registers, flex streamers, banners, handbills, complaint cell cards, staff cards and certificates for trained beneficiaries.
- C. Designed, developed and disbursed Dairy Project's diary and table calendar 2015 among Dairy Project staff and stakeholders.
- D. Communication team provided support to exhibit Dairy Project's stall at One-day UVAS Job Fair, held on January 22, 2015. Dr. Abdul Karim Bhatti, Director, Big Bird Group of Companies along with Prof Dr. Talat Naseer Pasha, Vice Chancellor UVAS inaugurated the job fair. Dairy Project's stall attracted a large number of students, investors and input suppliers who displayed a keen interest to join Dairy Project's interventions in different capacities.
- E. Helped showcase Dairy Project's stall at One-day LUMS Internship Fair on February 20, 2015. Dairy Project's stall attracted over 100 students who expressed interest in joining the Dairy Project team.
- F. Developed and shared Terms of Reference for Street Shows using mobile float with the technical team.
- G. Completed technical evaluation of proposals received from potential firms for Training Video Modules activity.
- H. Provided support to exhibit Dairy Project's at U.S. Pavilion in Dawn Sarsabz Pakistan Agri Expo, on March 19-20, 2015. Over 350 individuals visited the Dairy Project's stall during two-day exhibit to learn about best farming practices, trainings, shed construction and farm management from project-trained beneficiaries and certified veterinarians.
- I. Provided support in efficient roll-out of MoU signing between USAID-DRDF Dairy Project and University of Veterinary Animal Sciences, Lahore, to collaborate in training of master trainers and other training programs in livestock and dairy sectors. Prof Dr Talat Naseer Pasha, Vice-Chancellor UVAS and Dr. Salman Shah, Chairman Dairy and Rural Development Foundation signed the MoU at a ceremony in UVAS on March 25, 2015.



Issues, Lessons Learnt and Way Forward

Gaining From Experience

Table 13. Challenges and Achievements

Component	Issue/Challenge	Solution/Recommendation
Artificial Insemination	New breeding policy created certain confusions/ambiguities in dairy industry.	Project Management had series of meetings with Secretary Livestock to explain the AI-training and post-training follow-up of dairy project. Still many points of this new policy are not conclusive. Project was waiting for finalization of breeding policy so that project could design its training in extension phase with 100% in compliance with new breeding policy.
	Trainees' access to open market animals for insemination and pregnancy diagnosis	A work permission letter is furnished in this regard.
	Access to slaughter house for pregnancy diagnosis on live animals	Project Management has a series of meetings with government authorities to get permission to use slaughter house for live animal practice.
Farm Up-gradation	Construction at most of the farm was halted due to long rainy season	-
	Shortage of laborer available for shed construction due to wheat harvesting	Farmer ensured the required labors by paying more than what paid for wheat harvesting
	Few of shortlisted farmers for farm up-gradation faced financial constrains as the expected resources turned down to provide money.	These farmers have wheat crop coming to maturity which will be provide enough funds to start up-gradation work.
Farmer-Training	Training team faced serious problems in multimedia demonstration of best farming practices	Teams were provided with flip-charts to overcome this issue.
	Mobilization and training for one day-training on daily bases was a daunting task for the project.	Project developed the strategy of opening training centers on alternate day for one-day training
	Bring the farmers to the training is becoming difficult day by day as the wheat harvesting is approaching	-
WLEW-Training	Missing market of required inputs supply in some areas.	Project market linkages team is working with vendors to make supply mechanism to make timely supply available for WELWs

Annexures:

Annex 1: Project Overview

The Dairy Project is a joint effort of the Dairy and Rural Development Foundation (DRDF) and the United States Agency for International Development (USAID) to foster sustainable increase in dairy and livestock productivity through adoption of best dairy farming practices, breed improvement, availability of timely extension services, and promotion of livestock businesses. The Dairy Project is being implemented in all four provinces, with a major focus on Punjab with a time frame of five years (July 2011- October 2016). The project contributes to the USAID's strategic objective of creating job opportunities and increasing income. The project objectives are aligned with Pakistan's development agenda, and its goal and objectives reflect national and regional priorities.

Farm up gradation and Bio gas plants

The first objective of the farm-up gradation is to provide an on-the-ground model for small dairy holders at village level, where they could observe the best dairy farming practices that are being implemented. Secondly, since access to the large mega farms for all small dairy farmers in a village is not possible, the universal training coverage is achieved by up-grading these farms and providing training access for the village and the surrounding area. Thirdly, these up-graded model farms serve as a meeting point and input supply hub for project-trained beneficiaries. The project aims to upgrade 100 farms with herd size of 5-25 dairy animals over the project life.

Animal nutrition is an essential part of animal health and milk productivity, and fodder is one of the important nutrients for these animals. Cost of production of fodder is a major concern for the farmer. The objective of establishing bio-gas plants is to shift irrigation tube-wells running on fuel/electricity to manure bio-gas units. The slurry produced from these bio gas units will also improve the fertility of the land which is another benefit accrued to the farmer. The project aims to develop such 5 bio-gas units during its extension phase.

Training and Support for Dairy Farmers

The primary objective of providing training and support to dairy farmers is to improve prevalent dairy farming practices for improving livestock productivity and enhancing incomes of rural households assisted by the Dairy Project. The project aims to train 48,600 progressive farmers and 500 commercial farmers and farm managers. From these, 800 farmers from Khyber Pakhtunkhwa, Sindh and Baluchistan are encouraged to attend the project's training courses in Punjab. These trainings cover several topics, including improved feeding and animal nutrition, importance of improved breeds, basic animal health, and farm equipment and shed management. Training for farm managers include separate components on basic book-keeping and business skills. Knowledge of basic business know-how adds to the skills of farm managers. Consequently, all trained farmers have a better understanding of the milk value chain and they know how to profitably create linkages within it.

Classroom trainings are being conducted at model dairy farms, where modern dairy farm-management techniques are implemented. After successful completion of the training course, participants are provided with basic equipment kit that helps them to put into practice the newly learnt farming practices. Trained farmers are visited frequently for support and follow up.

Training and Support for Artificial Insemination Technicians (AITs)

The objective of AI training is to improve the provision of AI services to foster good quality breeds that will improve livestock productivity and enhance income of rural youth. Under this component, 3,000 young individuals from rural Punjab, Khyber Pakhtunkhwa, Sindh and Baluchistan will be supported in attending the project's AI training courses in Punjab. AITs receive five weeks of training with two months follow up support. Trainings include a mix of theory, demonstration and practical exercises related to insemination, safe handling and maintenance of insemination guns, liquid nitrogen cylinders for transporting semen and other equipment. Classroom trainings take place at AIT Centers, established by the Dairy Project, and the Government of Punjab's Vocational Training Institute (PVTI).

Each AIT receives initial support to establish him as an entrepreneur. This support includes an AIT kit (including Nitrogen Cylinders, Semen, Semen Straws, and basic AI related equipment). A motorbike is also provided upon meeting certain performance criteria.

Training and Support for Women Livestock Extension Workers (WLEWs)

The objective of this component is to increase the use and availability of livestock services provided by WLEWs for improving livestock productivity and enhancing income of rural females. Under this component, 6,000 WLEWs will be trained out of which 1,000 will receive refresher and advance training course. WLEWs receive one-month training on basic animal health management, basic preventive animal health measure, identification of the most common diseases, immunization, basic treatment, animal nutrition and animal hygiene. The curriculum is updated in collaboration with University of Veterinary and Animal Sciences (UVAS). WLEWs are also trained in feed supply and milk collection to give them the expertise to further grow their businesses. They also receive training in book-keeping and business skills as well as how to develop linkages with service (including financial) and input suppliers along the dairy value chain.

Extension worker trainings are conducted in village clusters, so that women can attend training near their homes. A training camp is set up on a temporary basis at each site. The project arranges for transport to and from the site. All master trainers are women veterinary graduates. The program is certified by the University of Veterinary and Animal Sciences (UVAS).

Upon completion of the course, WLEWs selected for animal nursing are given a veterinary kit, while WLEWs doing concentrate business are supported by a stock of animal feed. The program also provides workers with basic mobile phones to enable easy communication with clients and input suppliers.

Awareness Campaign

The overall objective of the Dairy Project's mass awareness campaign is to increase awareness about the best dairy farming practices with a focus to improve livestock productivity in Pakistan. Under this component, TV, radio and print infomercials, on subjects such as de-worming, vaccination, mastitis control, breeding, and feeding practices, are being developed. The awareness campaigns through TV, radio and print media are to be aired in about 2,000 villages' across Punjab and other provinces. Farmer days and silage-making days are organized to motivate farmers to adopt improved animal husbandry practices.

Annex 2: Environmental Compliance

INTRODUCTION

The goal of USAID-DRDF Dairy project is to improve the productivity and efficiency of the dairy sector in Pakistan. The Dairy Project needs to deal with a number of safety, health and environment issues such as the proper disposal of waste semen straws, sheaths and animal organs, empty medicine bottles, health safety measures relating to semen, liquid nitrogen gas, organ and syringe handling & disposal, compliance to product specifications, bio-security measures at upgraded model farms to name a few.

REPORT ON COMPLIANCE

This report presents the findings based on the review of the training curriculum, physical inspection of sites, visits to class rooms and interviews of the beneficiaries by Environmental officers. Various guidelines were developed for the perusal of the project staff to ensure safe disposal of waste produced on sites. Additional guidelines include health and safety measures to avoid any harm or injury to the trainees.

A component wise description of environmental compliance is given below.

Component 1: Upgraded Model Farm:

Environmental mitigations are adopted at upgraded farms so that demonstrations on environmental best practices can take place and the farmers can better understand these practices, and consequently implement them at their farms as well.

The baseline condition at the proposed upgraded farm at the beginning was poor. However, with dairy project intervention and training, the quality of hygiene, bio-security measures, milk hygiene, disposal of waste, drinking water quality, and other health and safety measures at the upgraded farm improved to a great extent, and now the conditions are adequate to support training.



Compliance report is shared on a regular basis with field staff in case of non-compliance which has improved the situation and streamlined the process. However lime at the entry was an issue in the beginning but after discussion with the field management, the issue has been resolved and budget has been allocated towards bio-security measures at the upgraded training farms.

During the site selection for upgraded model farms, certain criteria was established to ensure compliance with environment and health issues. One such criterion was to avoid frequent ponding in farms as ponding can causes diseases, and the upgraded farm would not be a suitable model for other farms if ponding at animal holding was taking place. Year round supply of clean drinking water and construction of water channels for liquid manure handling in case of shed construction is part of the up-gradation plan. There are four farms in Bahawalpur and five in the Vehari zone where farmer training has been conducted.

Component 2: Farmer Training

Environmental Awareness Training curriculum has been added for the one-day farmer training, which includes bio-security measures at the farm, milk hygiene, milk quality test, restraining or crushing for personal safety, appropriate feed storage to ensure the maintenance of the concentrate feed quality, and general hygiene at the farm.

Environmental officers visited the training centers to observe whether the beneficiaries had been imparted with knowledge regarding safety, health and environment compliance through interviews. In most cases the information had been conveyed to the beneficiaries to an acceptable level. However, there were some instances in the beginning where some improvement was required but after



discussion with the zonal management, the issue was mitigated and training standard reached an adequate level.

Seven-day and one month farmer training sessions contain the environment related material in more detail. Health safety measures like the treatment stall or restraining methods for pregnancy examination, vaccination, medication, deworming, and artificial insemination are communicated to the dairy farmers and farm managers. Processes such as teat sanitization, organoleptic and surf test to check the milk quality are well

explained so as to ensure that milk from an infected animal is separated. Safety measures like dust mask usage, safety guard importance and maintenance of the silage machine for silage shows are being taught to the trainees.

In farmer training, farmers/farm managers are being briefed on how to handle and utilize manure in their field after fermentation—fermentation reduces the pathogens significantly, making nutrients usable by the soil, and consequently enhancing soil fertility.

Significance of appropriate storage of concentrate feed is also demonstrated and described to the farmers so that they can maintain the quality of feed because moisture from the ground surface and side walls can result in aflatoxins in the feed which is carcinogenic material.

White wash is done periodically inside the water trough at the training farms so that algae do not get produced inside the trough and water quality is maintained.

Further, the environment specialist along with chief of party conducted special sessions with 30-day farm managers about animal feeding, i.e. how to calculate the nutrient requirement of the animals and how to feed their animals in order to get the desired milk yield.

Component 3: Artificial Insemination Technicians' Training

All of the Artificial Insemination Technicians (AITs) sites impart training on best artificial insemination practices best practices.

All AI trainees wear Dangri (overalls), gum boots and gloves during practical training on live animals to minimize the chances of transferring disease to human beings. Master trainers have been informed to use gloves for the one animal only, i.e. not re-use the glove when handling a different animal. Compliance is taking place in the field now.



Organs are stored inside refrigerators in an enclosed container to inhibit the bacterial growth and prevent pathogens from spreading in the environment.

Crush is used to control the animals during live animal practice to prevent the injuries during insemination practice.

Health safety measures like liquid nitrogen handling, storage of semen and semen straw handling are taught theoretically as well as practically demonstrated. Safety measures such as the significance of using personal protective equipment (safety goggles & cryogenic gloves) are

described to the AI technicians.

Sheaths and contaminated polythene gloves are kept covered in dustbins till further disposal to prevent pathogens from spreading into the environment. During table practice, gloves and face masks are worn by the trainees.

There have been problems with respect to the disposal of organs as the quantities of organs are far more than the desired level. The disposal problem is persisting in the field. Organs were thrown in

River Ravi which is a highly undesirable practice. To improve the efficiency of the process heat treatment prior to the ultimate disposal in the land has been introduced. After heat treatment, organs will be converted into municipal solid waste and can be easily disposed of along with the city waste management system. Autoclave has been procured to serve the desired purpose so that organs can be disinfected before entering into the solid waste management chain.



Component 4: Women Livestock Extension Worker (WLEW) Training

WLEW training takes place at designated training centers in two districts: Bahawalpur and Vehari. Best basic livestock extension practices are taught to the WLEWs and health safety measures like handling of medicines and syringes have been incorporated into the training content.

Environment officer conducts environmental awareness sessions for each batch of WLEW's and gives relevant knowledge to the project beneficiaries about handling medicines, concentrate feed storage and appropriate disposal methods of syringes and empty medicine bottles etc.



Medicines are protected from the sunlight during outdoor sessions by use of kit bags, thereby complying with the product specifications. Moreover, the expiry date is checked before the use of medicines to eliminate the chance of using expired medicine. Furthermore, the environment officer also performs quarterly stock checking to ensure that materials and medicines are stored appropriately and to verify the expiry dates of medicines. Recommendation to improve the storage procedure has been conveyed.

Recapping needle increases the chance of needle prick injuries and zoonotic diseases. As a result the use of a needle cutter is implemented at the sites to avoid recapping. Hands are washed with soap after conducting surgery of an animal and gloves are also worn during surgery. Moreover, restraining methods have also been taught to the WLEWs so that they can prevent any possible injury from the animals during treatment.

Needle cutters were available on both sites for immediate disposal of needles after use so that chances of needle prick injuries are minimized.

Empty medicine bottles are disposed of after rendering them non reusable where ever possible, and syringes are disposed of along with their encapsulation hence complying with the guidelines. Syringes were placed into safety box after training session was over. Safety box was sealed prior to the disposal into the land. The Project is also looking at the option of incineration for the disposal of syringes and searching for some reasonable vendor at appropriate distance from the project sites.



Work Place Safety:

Work place inspection has been carried out at project offices and some of the observations were found which require improvement.

In PMU, like paint was not in the best of condition inside the building and susceptible to cause health issues upon inhalation in such an environment over a long period of time. Management has resolved the issue and the paint has been renewed.



Poor house-keeping and frayed wiring has been another issue.

Housekeeping is being managed better now and as far as the wiring is concerned, the administration staff has assured to resolve the issue within a few days. Poor wiring has also been an issue at Burj Attari site. The issue has been highlighted and chief of party has taken special notice and asked to resolve the issue on priority basis.

The height of bunk beds in the room was also an issue as the fan level was not very high. Based on the recommendations, the beds have been moved away from the circumference of the fans to avoid any accident(s).

WAY-FORWARD AND CONCLUSION:

By and large, the Dairy Project is in compliance with the safety, health and environment protocols in most of its activities. The Project has minimal adverse environmental impact. However, in some instances improvement were required. In such cases, necessary directions have been given to the Operations Department and precautionary measures have been taken to resolve the issues.

The Dairy project believes in continual improvement and efforts will be made to further improve the environmental conditions in the coming days.

Annex 3: Performance Evaluation Sampling Strategy

The primary objective of the evaluation activity conducted in January 2015 was to get a reliable indicator of the project's performance in three components vis-à-vis farmer, AIT and WLEWs trainings. Given logistical constraints, it was not possible to cover all districts from where the Dairy Project has trained beneficiaries. Therefore, for sampling purposes, the districts with less number of beneficiaries were excluded according to the set criteria. As the project's main focus is towards Punjab, the dropped districts were mainly from provinces other than Punjab. The remaining beneficiaries left for sampling were above 85% of the total trained, which is viable and a good representative of the population. .

For sampling purposes, proper statistical methods were adopted to determine the sample size for the survey. Confidence level of 90 percent and confidence interval of 5 percent were kept to gain more accurate insights to the impacts of the project. For the AIT component, 11 districts were covered by the random sample, whereas for the farmer's component, 10 districts were covered. In case of WLEWs, 11 districts were covered by survey sample. The evaluation sampling was also handicapped by the unavailability of baseline data, especially for the farmers' component. Hence, an evaluation design was adopted that allowed us to get both baseline and end line values. Detailed evaluation designs of each component are given below.

Farmer

In order to evaluate performance of the farmers, the strategy was designed keeping in view data limitations. Pre and Post methodology was adopted for the impact evaluation. Information regarding performance indicators was obtained in January 2015 on recall basis. Total of 263 farmers were randomly selected for the purpose of evaluation, from a total of 8,269 farmers trained.

Artificial Insemination Technician

To evaluate the performance of AITs, a total of 233 AITs were randomly picked to be surveyed out of 1,721 AIT from Punjab province. A Complete survey tool was designed to capture and measure the performance of these AITs.

Women Livestock Extension Workers

In case of WLEWs, a total of 357 WLEWs were sampled out of 5,014 WLEWS trained by the Dairy Project. A tool was designed in which the project could also capture all the social barriers these rural women have to face in their line of work, along with other performance indicators.

Survey Methodology:

Survey tools are designed in accordance with the project's key outcome indicators illustrated in Monitoring and Evaluation (M&E) Activity Plan. Keeping in view the experiences from the past quarterly surveys, survey tools are refined and necessary questions were added to gather more insights into the impacts of trainings provided by Dairy Project. Enumerators' training is an essential part of quality data fetching. A complete training session was organized in Vehari for all the enumerators conducting the survey. Enumerators were introduced to the probing methods and all research instruments were briefed one by one. After complete orientation on probing techniques and survey instruments, mock sessions were held which were observed and later on, trainers provided their feedback on mock sessions one by one.

After the finalization of questionnaire and providing required briefing to the enumerators, a pilot survey was carried out in Vehari zone. This not only refined the tool even further, but also helped the enumerators to get first-hand experience. Two such pilot activities were carried out before final implementation. After successful pilot testing and planning, the survey was carried out in Vehari and Bahawalpur.

To ensure the quality of data, M & E implements a comprehensive monitoring plan with the help of M & E zonal staff. M & E officers make random checks on the interview sessions carried out by the

enumerators to ensure accuracy of the data collected. Complete data flow procedures are documented with all the data quality and verification checks explicitly mentioned. After receiving the questionnaires from the enumerators and before entering it to the database, the data is verified by Monitoring and Evaluation Officer and Assistant Zonal Manager at two different stages to ensure the quality and accuracy of data. Even though the data is received after rigorous checking, the analyst further cleans it and checks for errors and outliers to have a refined data set for analysis. Initially, data is analyzed by generating explanatory graphs and doing cross tabulations, to get a better understanding of the facts and figures provided in data. Afterwards, important ratios and percentages are computed against the performance indicators to calculate project's success rate in comparison to the targets.



SUCCESS STORY

Improving Livelihoods through Better Breeds

The Dairy Project aims to train young, educated men and establish them as AI technicians and improve AI services for better breeding facilities leading to increased livestock productivity and enhanced incomes of rural youths across South Punjab.



“On average I spend about Rs.3000/- out of my improved income for health and education services for my family.”

Asif Razak, Artificial Insemination Technician

Chak Ranjanwala, Moza
Azmat Shah P/O Qadir
Buksh, Tehsil Kamalia,
District Toba Tek Singh.

Asif Razaq, a 28 year old rural resident in Toba Tek Singh found a means to improve his livelihood by qualifying himself as a skilled entrepreneur in the field of artificial insemination and cater to a growing demand for breed improvement services among rural livestock communities in South Punjab.

USAID DRDF Dairy Project's Artificial Insemination trainings aim to significantly empower unemployed rural youth as entrepreneurs who can offer services to dairy farmers. These farmers benefit from access to better quality semen supplies ensuring breed improvement among animals. The overall aim is to ensure that through better breeding, farmers are able to increase their milk production and incomes.

As a result, income opportunities for both farmers and Artificial Insemination Technicians are created. Trainees are provided five weeks in-house training at selected training centers. Successful candidates are provided support kits to facilitate their initial business needs as well.

Once a trainee has successfully met required performance criteria, The Dairy Project also provides a motorbike. These motorbikes help AITs travel long distances to other villages in order to perform insemination cases and also respond in a timely manner to urgent requests made by farmers.

In response to a mobilization campaign organized by USAID DRDF Dairy Project's team, Asif Razaq submitted an application to get himself enrolled for Artificial Insemination training program. After obtaining relevant information about training opportunities, he appeared for a required test and interview and was successfully selected on the basis of merit.

According to Asif, “I have inseminated about 400 animals out of which about 270 animals are pregnant. Total conception rate is about 67%.” He earns between PKR 7,000 – 10,000 per month which enables him to spend on better quality healthcare, education and improved living standards for his family.

In addition to artificial insemination services, Asif Razak also offers value addition services that help supplement his additional income, “I provide pregnancy diagnosis services along with Artificial Insemination services and earn an additional Rs.5,000/-“.

To enhance his career as an Artificial Insemination Technician, Asif Razak would like to join USAID DRDF Dairy Project's upcoming trainings to improve his technical skills. This initiative will not only result in improved services and increased livelihood for him as an entrepreneur but will also translate into breed improvement and advanced health care services available to his client pool of dairy farmers.



SUCCESS STORY

Higher income, higher education

USAID-DRDF Dairy Project is committed to improve livestock productivity and incomes of unemployed and marginalized rural women by training them as Women Livestock Extension Workers.



“I can now pursue my dream of achieving higher education.”

Memoona Farid, Woman Livestock Extension Worker, Chak 158EB, Tehsil Burewala, District Vehari.

Memoona, an unmarried resident of Vehari, completed her education till matriculation but was unable to continue with higher education due to insufficient financial resources. She was keen to build on her educational foundation and empower herself. Committed to the idea of transforming her life, she recognized USAID-DRDF Dairy Project’s trainings as a unique opportunity to enhance her technical skills and qualify as a certified livestock extension worker.

USAID-DRDF Dairy Project through its Women Livestock Extension Workers training program empowers unskilled rural women through the provision of hands on 30 percent theoretical and 70 percent practical training with official certification from the University of Veterinary and Animal Sciences. This certification enables qualified Women Livestock Extension Workers with necessary technical expertise required to provide timely and essential animal health care and management services at their villages.

“During this hands-on training, I learnt about vaccination, deworming, record-keeping, feeding, free-access to water and hygiene”, Memoona confirmed. After successful completion and certification of four-week training, the Dairy Project equipped Memoona with a basic startup kit and a cell phone. The Dairy Project also provided necessary follow up support that would encourage establishment of a sustainable income stream through facilitation of strong market linkages between Memoona, her client base and input suppliers.

Memoona happily reports that after her training she was able to accumulate a profit of PKR. 9930 earned over a span of three months by providing basic animal healthcare treatment, vaccination and ear tagging services. Her expertise has not only catered to a substantial demand within her own village but also caters to veterinary needs in neighbor villages as well.

Empowered with technical expertise, Memoona is now more confident of realizing her dream of pursuing higher education. “My success is greatly indebted to USAID-DRDF Dairy Project team, who helped me explore new ways of gaining a better income through its Woman Livestock Extension Workers training program for unemployed and underprivileged rural women across South Punjab. After receiving this training, I am not only technically trained to provide timely basic livestock health and management services for my community but can also pursue my objective of achieving better education.”



SUCCESS STORY

Community Role Models

Dairy Project's activities will play an important role in transforming livelihoods of rural communities through adoption of best farming practices and breed improvement within the dairy sector.



“The community around me benefits from greater awareness about best dairy farm practices that they can implement”

Jamil Ahmad, Farmer

Chak No. 120/EB tehsil
Burewala District Vehari

A key component of USAID-DRDF Dairy Project is to provide training and support to dairy farmers. The program has trained 9,000 farmers and 100 farm managers during the first three years of project life. These trainings aim at providing a modern insight towards dairy farming for farmers, who have been following traditional farming practices historically.

Farmers are trained in improved feeding and animal nutrition, basic level animal health management, shed management and the importance of improved breeds through artificial insemination. These trainings for dairy farmers in best practices will increase milk yields of animals and subsequently boost farmers' incomes.

After completion of training, participants' level of understanding is examined and they are provided with a support kit to implement best farm management practices. Under this component, the Dairy Project also trains farmers with livestock holdings and young aspiring graduates to develop their careers as farm managers.

One of the successful participants in USAID DRDF Dairy Project's trainings is Jamil Ahmad, a farmer from Vehari. Jamil Ahmad is a landlord who operates a Nestle Ltd. Chilling Unit. He has already completed an intermediate degree as Fellow of Arts. After learning about USAID DRDF Dairy Project's training options for farmers through a social mobilization team, Jamil Ahmad successfully passed a written test and interview and was enrolled in a seven-day farmer training on best dairy farm practices.

As a trained dairy farmer, Jamil Ahmad has emerged as inspirational role model for other dairy farmers in his community who can emulate best practices endorsed by him.

According to Jamil Ahmad, “I invest profits earned on buying better quality animals and aspire so establish my own commercial dairy farm.”

Through building the capacity of farmers such as Jamil Ahmad, Dairy Project successfully achieves its primary objective of creating incomes and opportunities for rural farmers, largely associated with the dairy sector in Pakistan.

Since Dairy Project's inception, 9,286 dairy farmers have acquired two-day and four-day trainings on best dairy farming practices and more than 85 percent of these farmers have adopted best dairy farming practices and reported an increase in their milk productivity by 19 percent, which is equivalent to \$60 per farmer, per month in incremental income.